

WHAT IS CLAIMED IS:

1. A method of treating, preventing or ameliorating a disorder responsive to the induction of apoptosis in an animal suffering therefrom, comprising administering to a mammal in need of such treatment an effective amount of a compound selected from the group consisting of:

2-(Morpholin-4-yl)-ethyl gambogate;
2-Dimethylaminoethyl gambogate;
N-[3-(4-Methyl-piperazin-1-yl)-propyl]gambogamide;
N-(3-Morpholin-4-yl-propyl)gambogamide;
Methyl 37,38-Dihydroxy-gambogate;
Methyl 37,38-Dihydroxy-9,10-dihydro-10-morpholinyl-gambogate;
Methyl 20-Ethylaldehyde-9,10-dihydro-10-morpholinyl-morellinate;
N-(4-Azido-2,3,5,6-tetrafluoro-benzyl)gambogamide;
N-(1,2-Dicarboxylethyl)gambogamide; and
N-(4-Azidobenzohydrazide)gambogamide.

2. The method of claim 1 where the compound is selected from the group consisting of:

2-(Morpholin-4-yl)-ethyl gambogate;
2-Dimethylaminoethyl gambogate;
N-[3-(4-Methyl-piperazin-1-yl)-propyl]gambogamide;
N-(3-Morpholin-4-yl-propyl)gambogamide;
Methyl 37,38-Dihydroxy-gambogate;
Methyl 37,38-Dihydroxy-9,10-dihydro-10-morpholinyl-gambogate;

and

Methyl 20-Ethylaldehyde-9,10-dihydro-10-morpholinyl-morellinate.

3. The method of claim 1, wherein said disorder is cancer.

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4. The method according to claim 3, wherein said cancer is Hodgkin's disease, non-Hodgkin's lymphomas, acute and chronic lymphocytic leukemias, multiple myeloma, neuroblastoma, breast carcinomas, ovarian carcinomas, lung carcinomas, Wilms' tumor, cervical carcinomas, testicular carcinomas, soft-tissue sarcomas, chronic lymphocytic leukemia, primary macroglobulinemia, bladder carcinomas, chronic granulocytic leukemia, primary brain carcinomas, malignant melanoma, small-cell lung carcinomas, stomach carcinomas, colon carcinomas, malignant pancreatic insulinoma, malignant carcinoid carcinomas, malignant melanomas, choriocarcinomas, mycosis fungoides, head and neck carcinomas, osteogenic sarcoma, pancreatic carcinomas, acute granulocytic leukemia, hairy cell leukemia, neuroblastoma, rhabdomyosarcoma, Kaposi's sarcoma, genitourinary carcinomas, thyroid carcinomas, esophageal carcinomas, malignant hypercalcemia, cervical hyperplasia, renal cell carcinomas, endometrial carcinomas, polycythemia vera, essential thrombocytosis, adrenal cortex carcinomas, skin cancer, or prostatic carcinomas.

5. The method according to claim 4, wherein said compound is administered together with at least one known cancer chemotherapeutic agent, or a pharmaceutically acceptable salt of said agent.

6. The method of claim 1, wherein said disorder is drug resistant cancer.

7. The method according to claim 1, wherein said compound is administered together with at least one compound selected from the group consisting of busulfan, cis-platin, mitomycin C, carboplatin, colchicine, vinblastine, paclitaxel, docetaxel, camptothecin, topotecan, doxorubicin, etoposide, 5-azacytidine, 5-fluorouracil, methotrexate, 5-fluoro-2'-deoxyuridine, ara-C, hydroxyurea, thioguanine, melphalan, chlorambucil,

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cyclophosphamide, ifosfamide, vincristine, mitoguazone, epirubicin, aclarubicin, bleomycin, mitoxantrone, elliptinium, fludarabine, octreotide, retinoic acid, tamoxifen, Herceptin[®], Rituxan[®], arsenic trioxide, gemcitabine, doxazosin, terazosin, tamsulosin, CB-64D, CB-184, haloperidol, lovastatin, simvastatin, pravastatin, fluvastatin, atorvastatin, cerivastatin, amprenavir, abacavir, CGP-73547, CGP-61755, DMP-450, indinavir, nelfinavir, tipranavir, ritonavir, saquinavir, ABT-378, AG 1776, BMS-232,632, bexarotene, tretinoin, 13-cis-retinoic acid, 9-cis-retinoic acid, α -difluoromethylornithine, ILX23-7553, fenretinide, N-4-carboxyphenyl retinamide, lactacystin, MG-132, PS-341, Gleevec[®], ZD1839 (Iressa), SH268, genistein, CEP2563, SU6668, SU11248, EMD121974, R115777, SCH66336, L-778,123, BAL9611, TAN-1813, flavopiridol, UCN-01, roscovitine, olomoucine, celecoxib, valecoxib, rofecoxib and alanosine.

8. The method according to claim 7, wherein said compound(s) are administered after surgical treatment for cancer.

9. The method according to claim 3 or 6, wherein said animal is also treated with radiation therapy.

10. The method according to claim 1, wherein said disorder is an autoimmune disease.

11. The method according to claim 1, wherein said disorder is an infectious viral disease.

12. The method according to claim 1, wherein said disorder is rheumatoid arthritis.

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13. The method according to claim 1, wherein said disorder is an inflammatory disease.

14. The method according to claim 1, wherein said disorder is psoriasis.

15. The method according to claim 1, wherein said disorder is a skin disease.

16. The method of claim 1, wherein said compound is administered as part of an intravenous dosage form comprising an effective amount of said compound and a pharmaceutically acceptable formulation.

17. The method of claim 1, wherein said effective amount is in the range of 0.01 mg/kg to 200 mg/kg.

18. A compound selected from the group consisting of:

2-(Morpholin-4-yl)-ethyl gambogate;

2-Dimethylaminoethyl gambogate;

N-[3-(4-Methyl-piperazin-1-yl)-propyl]gambogamide;

N-(3-Morpholin-4-yl-propyl)gambogamide;

Methyl 37,38-Dihydroxy-gambogate;

Methyl 37,38-Dihydroxy-9,10-dihydro-10-morpholinyl-gambogate;

Methyl 20-Ethylaldehyde-9,10-dihydro-10-morpholinyl-morellinate;

~~*N*-(4-Azido-2,3,5,6-tetrafluoro-benzyl)gambogamide;~~

N-(1,2-Dicarboxylethyl)gambogamide; and

N-(4-Azidobenzohydrazide)gambogamide.

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19. The compound of claim 18 selected from the group consisting of:

2-(Morpholin-4-yl)-ethyl gambogate;
2-Dimethylaminoethyl gambogate;
N-[3-(4-Methyl-piperazin-1-yl)-propyl]gambogamide;
N-(3-Morpholin-4-yl-propyl)gambogamide;
Methyl 37,38-Dihydroxy-gambogate;
Methyl 37,38-Dihydroxy-9,10-dihydro-10-morpholinyl-gambogate;

and

Methyl 20-Ethylaldehyde-9,10-dihydro-10-morpholinyl-morellinate.

20. A pharmaceutical composition, comprising a compound of claim 18 and a pharmaceutically acceptable carrier.

21. The pharmaceutical composition of claim 20, further comprising at least one known cancer chemotherapeutic agent, or a pharmaceutically acceptable salt of said agent.

22. The pharmaceutical composition of claim 20, wherein said compound is administered together with at least one compound selected from the group consisting of busulfan, cis-platin, mitomycin C, carboplatin, colchicine, vinblastine, paclitaxel, docetaxel, camptothecin, topotecan, doxorubicin, etoposide, 5-azacytidine, 5-fluorouracil, methotrexate, 5-fluoro-2'-deoxy-uridine, ara-C, hydroxyurea, thioguanine, melphalan, chlorambucil, cyclophosphamide, ifosfamide, ~~vinorelbine~~, mitoguazone, epirubicin, aclarubicin, bleomycin, mitoxantrone, elliptinium, fludarabine, octreotide, retinoic acid, tamoxifen, Herceptin®, Rituxan®, arsenic trioxide, gamcitabine, doxazosin, terazosin, tamsulosin, CB-64D, CB-184, haloperidol, lovastatin, simvastatin, pravastatin, fluvastatin, atorvastatin, cerivastatin, amprenavir, abacavir, CGP-73547, CGP-61755, DMP-450, indinavir, nelfinavir, tipranavir, ritonavir,

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saquinavir, ABT-378, AG 1776, BMS-232,632, bexarotene, tretinoin, 13-cis-retinoic acid, 9-cis-retinoic acid, α -difluoromethylornithine, ILX23-7553, fenretinide, N-4-carboxyphenyl retinamide, lactacystin, MG-132, PS-341, Gleevec®, ZD1839 (Iressa), SH268, genistein, CEP2563, SU6668, SU11248, EMD121974, R115777, SCH66336, L-778,123, BAL9611, TAN-1813, flavopiridol, UCN-01, roscovitine, olomoucine, celecoxib, valecoxib, rofecoxib and alanosine.